

2.3 Graphing Linear Eqns

whenever graph, need 2 points

Slope-Intercept Form

$$y = mx + b$$

1st pt = b , or y-intercept

2nd pt = start @ 1st pt

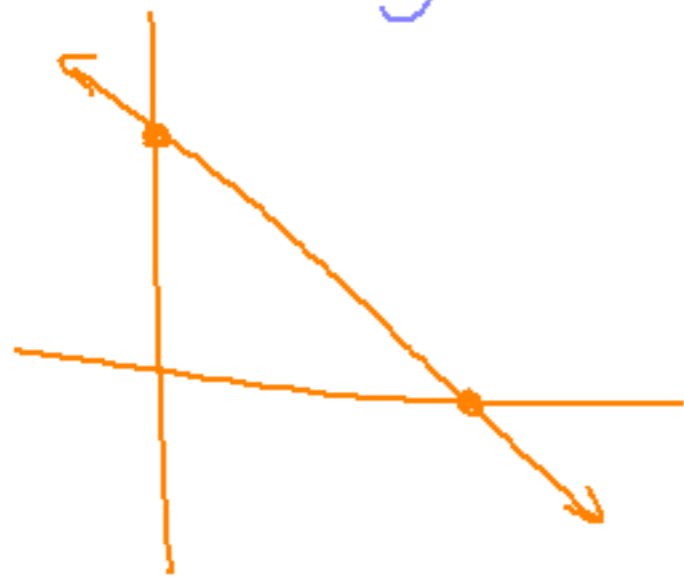
& use slope (as a fraction).

Standard Form

$$Ax + By = C$$

$A, B, C = \text{constants}$

$$\boxed{y = mx + b}$$



1st pt:

x-int:

- where line crosses
x-axis

- plug in 0 for y
+ solve for x.

2nd pt:

y-int:

- where line crosses
y-axis

- plug in 0 for x and
solve for y.

Horiz. line

$$y = b$$

$$f(x) = b$$

$$g(x) = b$$

$$y = 4$$

$$(2, 4)$$

$$(8, 4)$$

All pts:

$$(\quad, b)$$

Zero slope

Vertical line

$$X = C$$



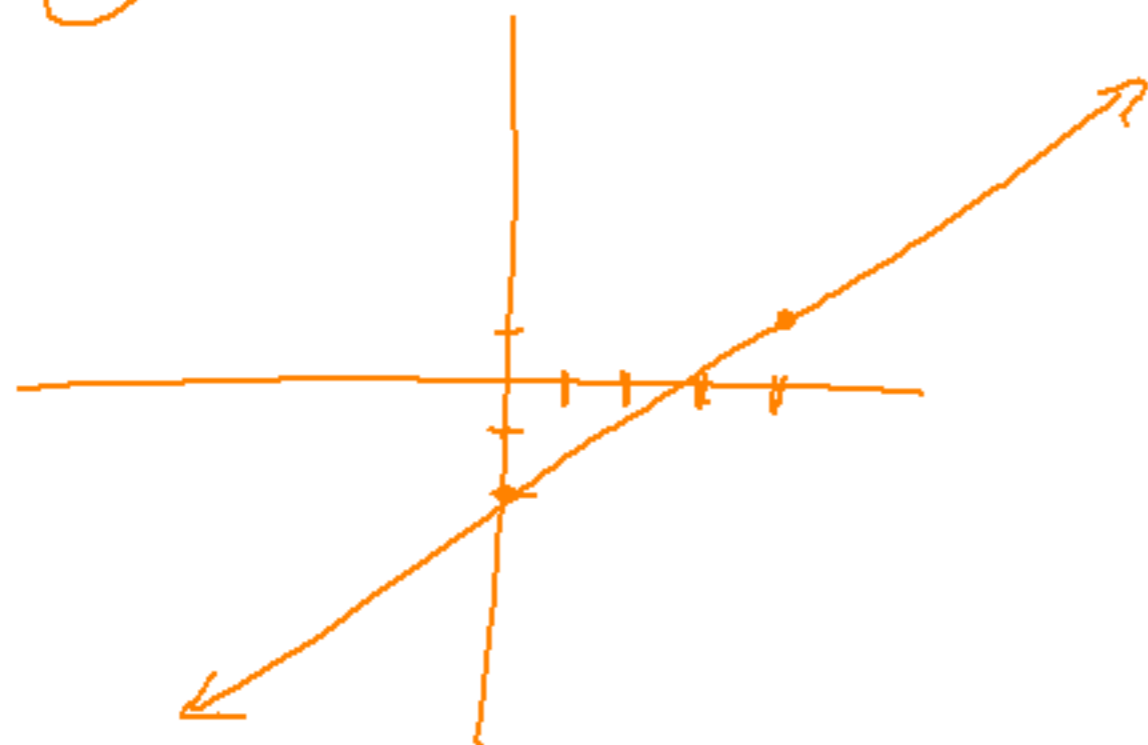
DIV BY 0

all pts:

(C, \quad)

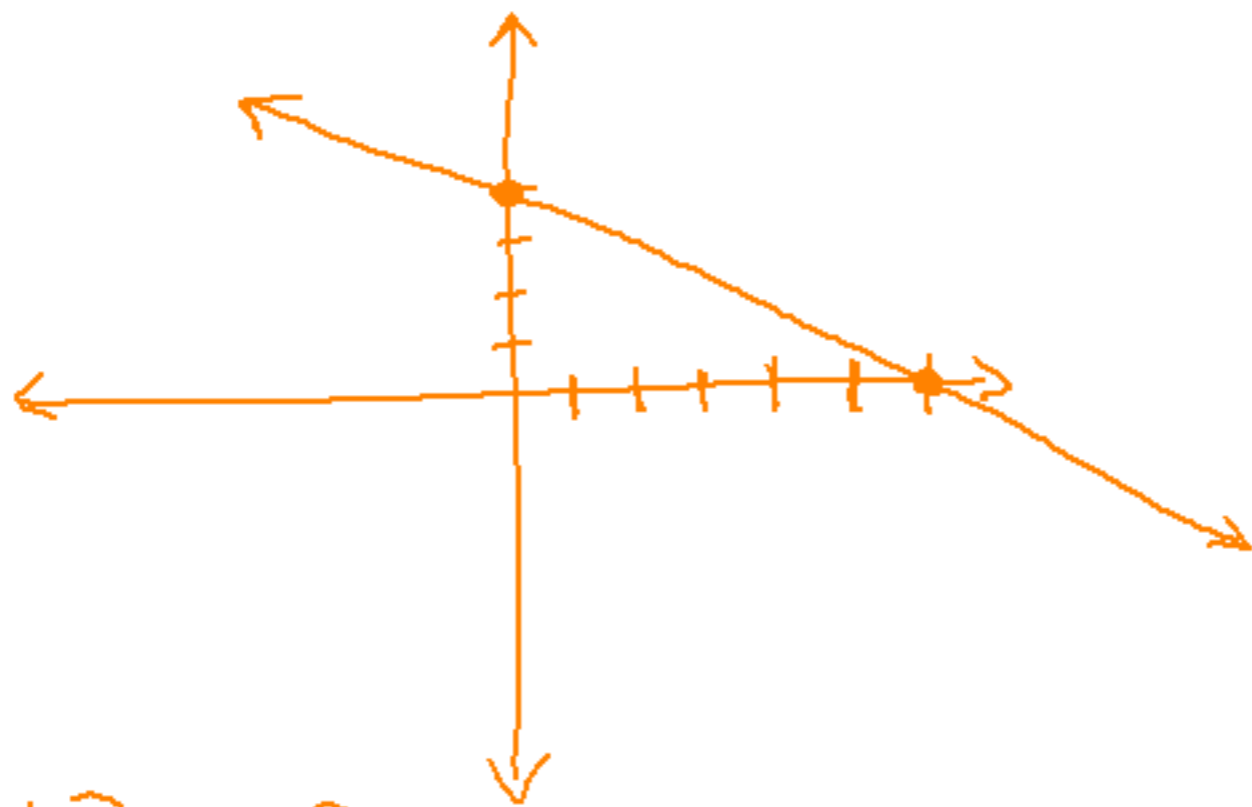
slope is undefined

$$\textcircled{1} y = \frac{3}{4}x - 2$$



$$m = \frac{3}{4}$$

$$\textcircled{2} \quad 2x + 3y = 12$$



$$2(0) + 3y = 12$$

$$3y = 12$$

$$\boxed{y = 4}$$

$$2x + 3(0) = 12$$

$$2x = 12$$

$$\boxed{x = 6}$$

$$2x + 3y = 12$$

$$3y = -2x + 12$$

$$y = -\frac{2}{3}x + 4$$

$$m = \frac{-4}{6} = -\frac{2}{3}$$

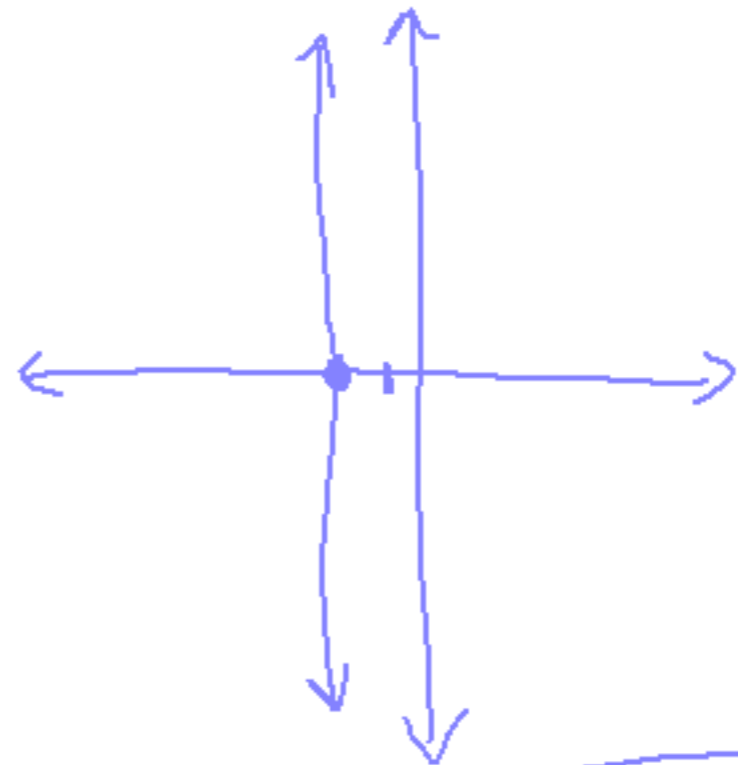
③ $y = 3$



$y = 0x + 3$

$m = 0$

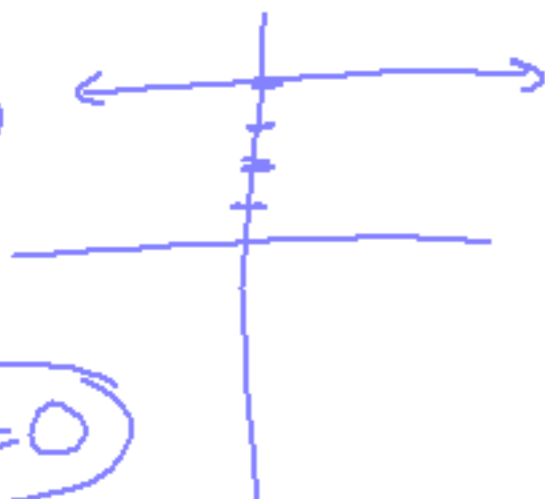
④ $x = -2$



$m = \text{undefined}$

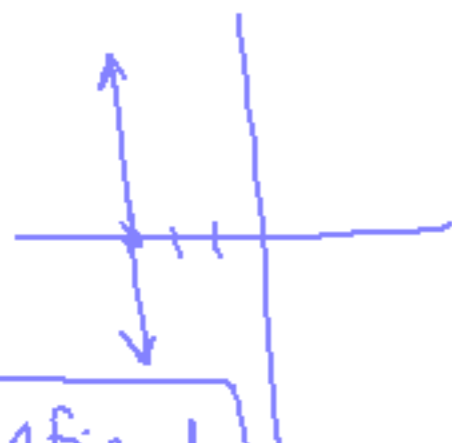
Examples:

①



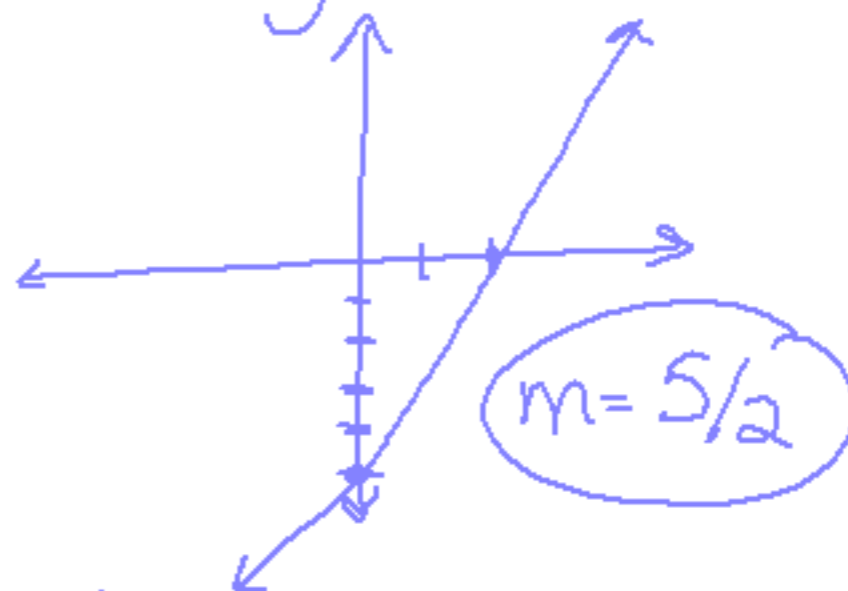
$$m=0$$

③



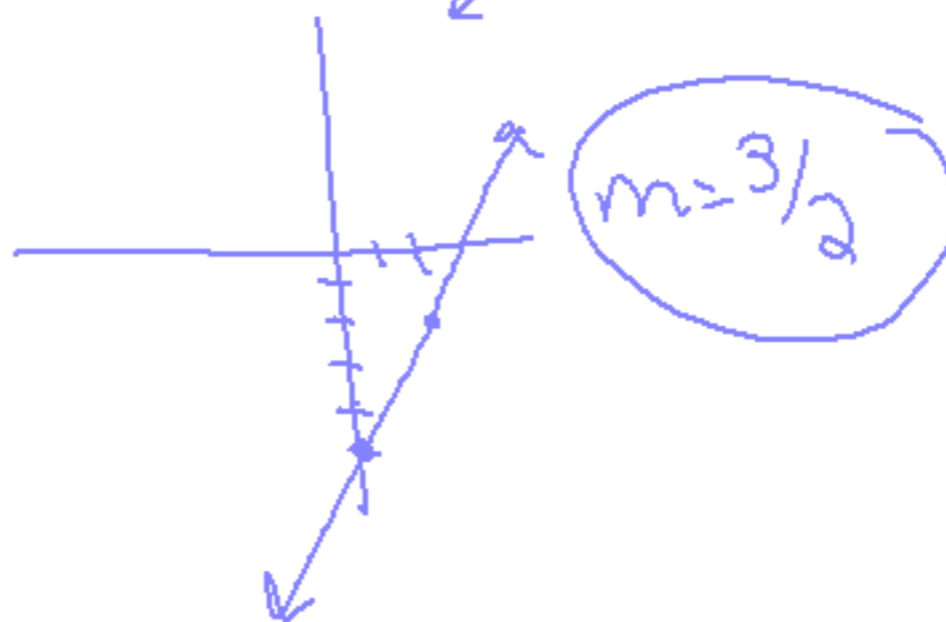
$m = \text{undefined}$

② $5x - 2y = 10$



$$m = 5/2$$

④



$$m = 3/2$$